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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,697	12/07/2001	Katsuhisa Mochizuki	35.C16071	7655

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EXAMINER

LEWIS, MONICA

ART UNIT PAPER NUMBER

2822

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,697

Applicant(s)

MOCHIZUKI, KATSUHISA

Examiner

Monica Lewis

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the amendment filed September 9, 2002.

Response to Arguments

2. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
4. The disclosure is objected to because of the following informalities: a) TAB tape 11 is not shown Figures 7 or 8 (See Page 6 Lines 5 and 6).

Appropriate correction is required.

Drawings

5. Figures 7 and 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "solid state image pickup apparatus consisting of the semiconductor apparatus as set forth in claims 5 to 8" the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

7. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

8. Claim 9 is objected to because of the following informalities: a) it is not clear from the way claim 9 is written whether it is a dependant or independent claim. Please rewrite claim 9 as the other dependant claims are written "according to claim _" (See Claims 2, 3 and 6-8).

Appropriate correction is required.

9. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 6, 8, 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by the following: a) "lead has a hole adapted to be adhered to an object" (See Claim 10); b) "lead has a hole for enhancing to adhere" (See Claim 11); c) "sandwiched" (See Claim 6); and d) "at least one of a" (See Claim 8).

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Fetty (U.S. Patent No. 5,132,772).

In regards to claim 4, Fetty discloses the following:

a) an apparatus comprising a lead (28) of a flexible wiring film, a device chip (22) electrically connected to the lead, and a sealant for sealing a connection portion between said lead and said device chip, wherein said lead has a hole (30) formed in a portion in contact with said sealant (See Figure 3).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1, 3, 5, 6 and 8, as far as understood, are rejected under 35 U.S.C. 103(a) as obvious over Applicant's Prior Art Figure in view of Fetty (U.S. Patent No. 5,132,772).

In regards to claim 1, Applicant's Prior Art discloses the following:

- a) a flexible wiring film comprising a lead (3) of an electric conductor; and
- b) an insulating film (8 and 9).

In regards to claim 1, Applicant's Prior Art fails to disclose the following:

- a) lead has a hole.

However, Fetty discloses the use of a lead with a hole (See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a lead with a hole as disclosed in Fetty because it aids in facilitating the bonding process.

Additionally, since Applicant's Prior Art Figure and Fetty are both from the same field of endeavor, the purpose disclosed by Fetty would have been recognized in the pertinent art of Applicant's Prior Art Figure.

In regards to claim 3, Applicant's Prior Art Figure fails to disclose the following:

a) hole is of a shape selected from a circle, an elongated circle, an oval, and an elongated oval.

However, Fetty discloses the use of a lead with a hole in a circular shape (See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a lead with a hole as disclosed in Fetty because it aids in facilitating the bonding process.

Additionally, since Applicant's Prior Art Figure and Fetty are both from the same field of endeavor, the purpose disclosed by Fetty would have been recognized in the pertinent art of Applicant's Prior Art Figure.

In regards to claim 5, Applicant's Prior Art discloses the following:

a) a semiconductor apparatus comprising a lead of a flexible wiring film, a semiconductor device chip (2) electrically connected to the lead (3), and a protecting member (1) for protecting a surface of the semiconductor device chip, which are sealed with a sealant (5) in a peripheral portion of said semiconductor device chip (See Figure 7).

In regards to claim 5, Applicant's Prior Art fails to disclose the following:

a) lead has a hole formed in a portion in contact with the sealant.

However, Fetty discloses the use of a lead with a hole (See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a lead with a hole as disclosed in Fetty because it aids in facilitating the bonding process.

Additionally, since Applicant's Prior Art Figure and Fetty are both from the same field of endeavor, the purpose disclosed by Fetty would have been recognized in the pertinent art of Applicant's Prior Art Figure.

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In regards to claim 6, Applicant's Prior Art discloses the following:

a) at least a part of said hole is formed in a region where a portion of the lead is sandwiched between said semiconductor device chip and said protecting member (See Figure 7).

In regards to claim 8, Applicant's Prior Art discloses the following:

a) at least one of a layer for preventing reflection of external light and a layer for preventing multiple reflection is formed between said lead and said protecting member (See Specification Page 2 Lines 14-27).

16. Claim 2 is rejected under 35 U.S.C. 103(a) as obvious over Applicant's Prior Art Figure in view of Fetty (U.S. Patent No. 5,132,772) and Yasuhara et al. (U.S. Patent No. 4,987,474).

In regards to claim 2, Applicant's Prior Art Figure fails to disclose the following:

a) hole is formed in a portion wider than a tip of said lead.

However, Yasuhara et al. ("Yasuhara") discloses the use of a lead with a hole formed in a wider portion (See Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a lead with a hole formed in a wider portion as disclosed in Yasuhara because it aids in reducing the amount of stress.

Additionally, since Applicant's Prior Art Figure and Yasuhara are both from the same field of endeavor, the purpose disclosed by Yasuhara would have been recognized in the pertinent art of Applicant's Prior Art Figure.

In regards to claim 3, Applicant's Prior Art Figure fails to disclose the following:

a) hole is of a shape selected from a circle, an elongated circle, an oval, and an elongated oval.

However, Fetty discloses the use of a lead with a hole in a circular shape (See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a lead with a hole as disclosed in Fetty because it aids in facilitating the bonding process.

Additionally, since Applicant's Prior Art Figure and Fetty are both from the same field of endeavor, the purpose disclosed by Fetty would have been recognized in the pertinent art of Applicant's Prior Art Figure.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over Fetty (U.S. Patent No. 5,132,772) in view of Yasuhara et al. (U.S. Patent No. 4,987,474).

In regards to claim 7, Fetty fails to disclose the following:

a) hole is formed in a portion wider than a tip of said lead.

However, Yasuhara discloses the use of a lead with a hole formed in a wider portion (See Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fetty to include the use of a lead with a hole formed in a wider portion as disclosed in Fetty because it aids in reducing the amount of stress.

Additionally, since Fetty and Yasuhara are both from the same field of endeavor, the purpose disclosed by Yasuhara would have been recognized in the pertinent art of Fetty.

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18. Claim 9 is rejected under 35 U.S.C. 103(a) as obvious over Fetty (U.S. Patent No. 5,132,772) in view of Yasuhara et al. (U.S. Patent No. 4,987,474) and Furukawa et al. (U.S. Patent No. 5,591,960).

In regards to claim 9, Fetty discloses the following:

a) an optical system (12) for focusing light on said solid-state image pickup apparatus (See Figure 7).

In regards to claim 9, Fetty fails to disclose the following:

a) a signal processing circuit for processing an output signal from said solid-state image pickup apparatus.

However, Furukawa et al. ("Furukawa") discloses the use of a signal processing circuit (See Column 5 Lines 14 and 15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fetty to include the use of a signal processing circuit as disclosed in Furukawa because it aids in processing signal read out.

Additionally, since Fetty and Furukawa are both from the same field of endeavor, the purpose disclosed by Furukawa would have been recognized in the pertinent art of Fetty.

19. Claim 9 is rejected under 35 U.S.C. 103(a) as obvious over Applicant's Prior Art Figure in view of Fetty (U.S. Patent No. 5,132,772) and Furukawa et al. (U.S. Patent No. 5,591,960).

In regards to claim 9, Applicant's Prior Art discloses the following:

a) an optical system (12) for focusing light on said solid-state image pickup apparatus (See Figure 7).

In regards to claim 9, Applicant's Prior Art fails to disclose the following:

a) a signal processing circuit for processing an output signal from said solid-state image pickup apparatus.

However, Furukawa discloses the use of a signal processing circuit (See Column 5 Lines 14 and 15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Applicant's Prior Art Figure to include the use of a signal processing circuit as disclosed in Furukawa because it aids in processing signal read out.

Additionally, since Applicant's Prior Art and Furukawa are both from the same field of endeavor, the purpose disclosed by Furukawa would have been recognized in the pertinent art of Applicant's Prior Art.

20. Claims 10 and 11, as far as understood, are rejected under 35 U.S.C. 103(a) as obvious over Fetty (U.S. Patent No. 5,132,772) in view of Applicant's Prior Art Figure.

In regards to claim 10, Fetty discloses the following:

a) a flexible wiring film comprising a lead of an electric conductor (See Figure 3);
and
b) lead has a hole adapted to be adhered to an object (See Figure 3).

In regards to claim 10, Fetty fails to disclose the following:

a) insulating film.

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However, Applicant's Prior Art discloses the use of insulating film (See Figure 7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fetty to include the use of an insulating film as disclosed in Applicant's Prior Art because it aids in keeping the device from shortening out.

Additionally, since Fetty and Applicant's Prior Art Figure are both from the same field of endeavor, the purpose disclosed by Applicant's Prior Art Figure would have been recognized in the pertinent art of Fetty.

In regards to claim 11, Fetty discloses the following:

- a) a flexible wiring film comprising a lead of an electric conductor (See Figure 3);
- and
- b) lead has a hole for enhancing to adhere (See Figure 3).

In regards to claim 11, Fetty fails to disclose the following:

- a) insulating film.

However, Applicant's Prior Art discloses the use of insulating film (See Figure 7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fetty to include the use of an insulating film as disclosed in Applicant's Prior Art because it aids in keeping the device from shortening out.

Additionally, since Fetty and Applicant's Prior Art Figure are both from the same field of endeavor, the purpose disclosed by Applicant's Prior Art Figure would have been recognized in the pertinent art of Fetty.

Conclusion

21. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: a) Bigler et al. (U.S. Patent No. 5,455,200) discloses a semiconductor device having a lead on chip having bond pads; b) Chan et al. (U.S. Patent No. 5,647,124) discloses a slotted lead; c) Chillara et al. (U.S. Patent No. 5,569,956) discloses an interposer connecting leadframe; and d) Iwaya et al. (U.S. Publication No. 2002/0109215) discloses a semiconductor device.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 703-305-3743.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

December 23, 2002


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